



# CDF Operations January Shutdown

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*Phillip Koehn*

*Jan 23, 2003*

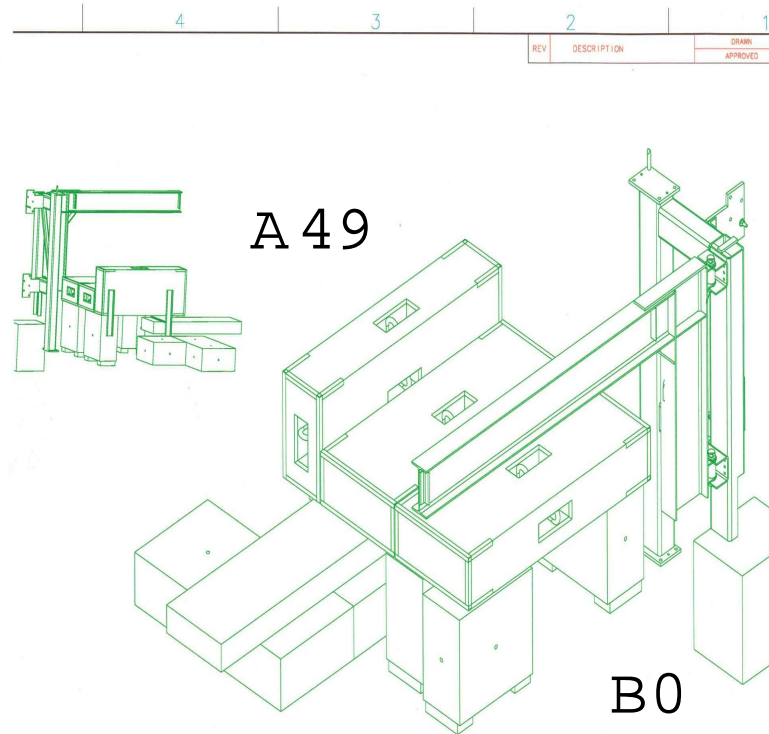
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## **Major tasks :**

- **Installation of shielding around West (A-side) low beta quads.**
- **ISL Cooling work - complete opening of last epoxy blocked lines with laser**
- **Replace photomultiplier tubes on West CLC**
- **General Maintenance**



# Shielding Plan



A lcove Section  
(temp .shielding blocks)



Bridge  
Section



# Installation of shielding around West(A-side) low beta quads

A 49



A 4900 Section  
(temp. shielding blocks)



Bridge  
Section



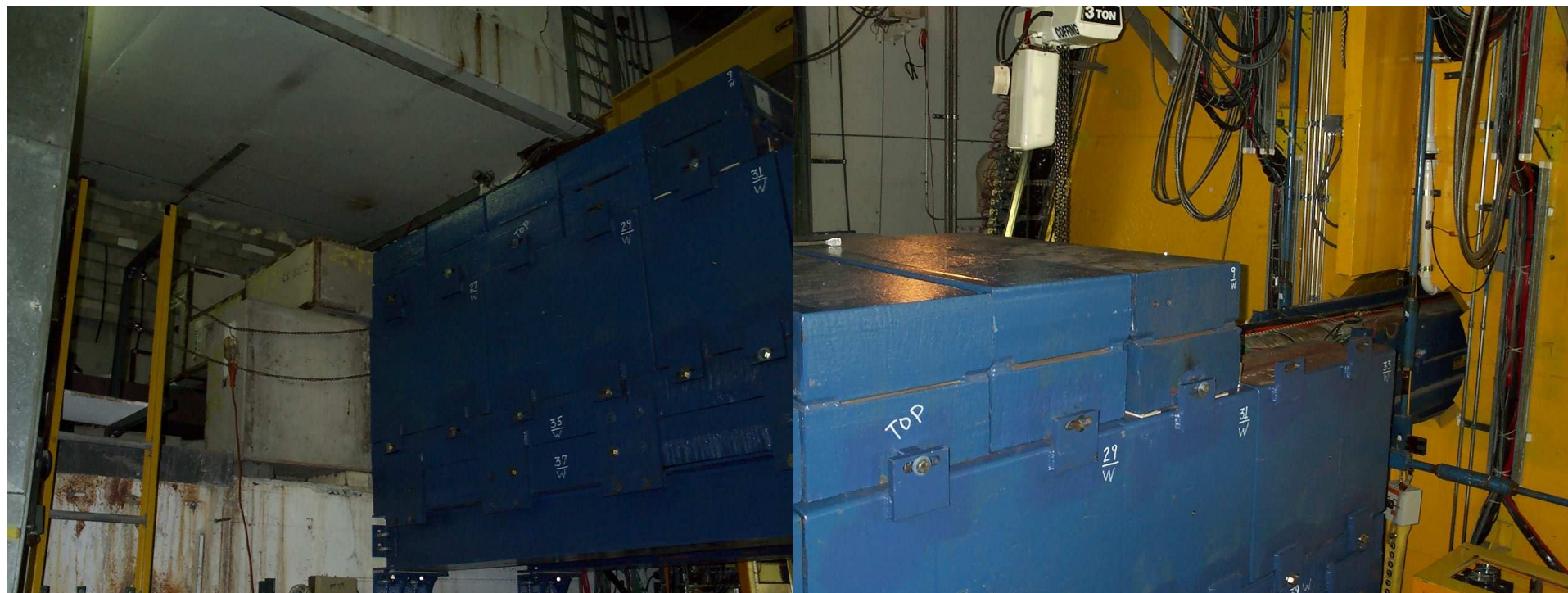


# shielding around West(A-side) low beta quads

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# ISL Cooling work

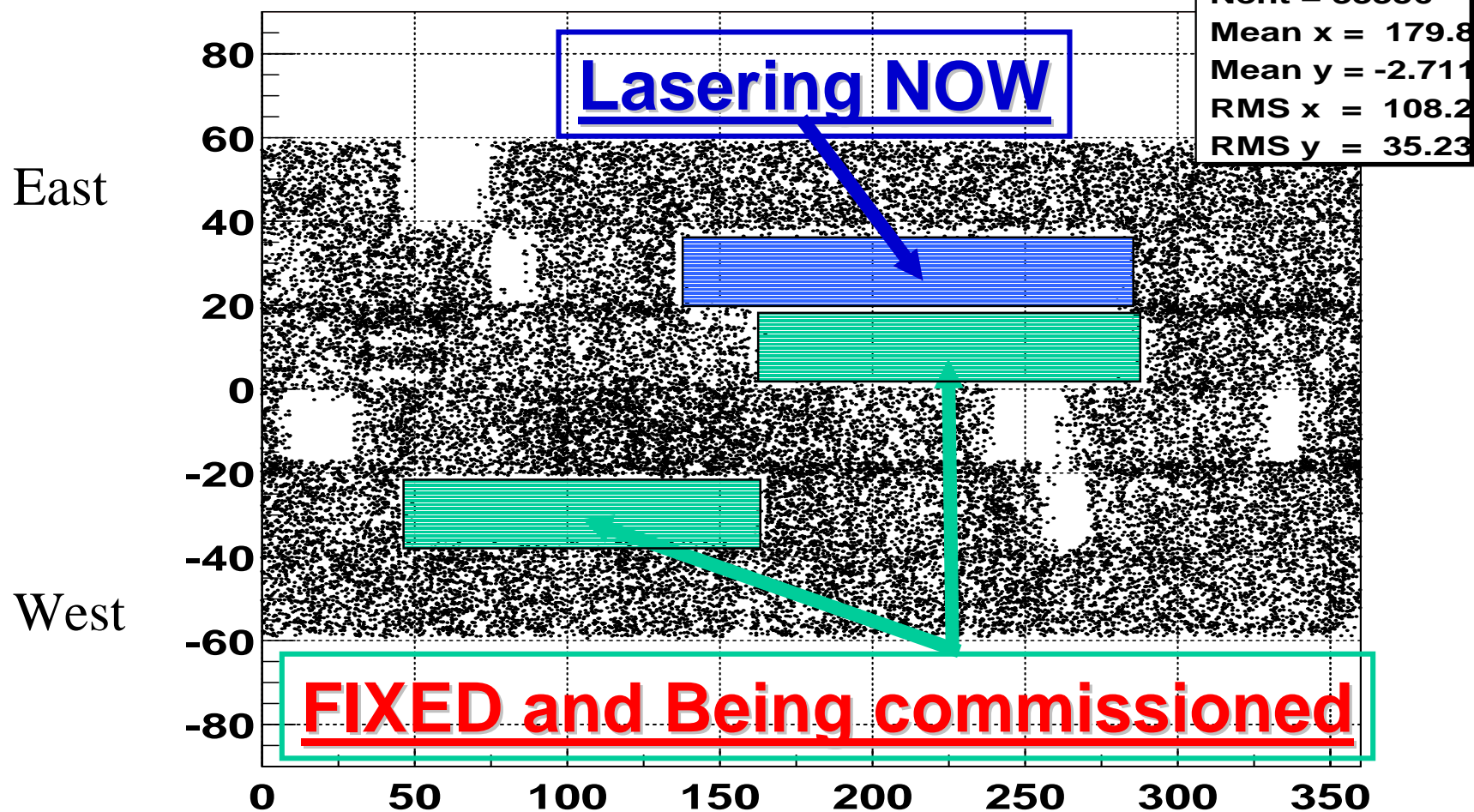
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- ISL has 34 cooling lines, in Mar-01 12 of them were blocked with epoxy.
- Went after 6 lines left after June '02 access.
  - 3 blocked and tough to fix because of access restrictions/limitations, thick epoxy blockages or both.
  - 3 had large temperature rise (~8-10 deg-C) from inlet to outlet.
    - problematic only for ISL Run2b rad doses
- As of Wednesday morning, only 1 blocked line left.
  - Remaining lines sufficiently opened such that the temperature rise (2-3 deg-C) is within the spec.
- The remaining *very difficult* line is being worked on...



# ISL L6 coverage

Z vs Phi of hits





# Replace photomultiplier tubes on West CLC

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- Replaced 47 of 48 PMTS on West Side
  - Lost gain thought to be due to helium contamination
    - (0.4 ADC/day – dead by March 2003).
  - New tubes more stable
    - Rate of gain loss  $\sim 1/100$  of old tubes.
    - Will lose  $< 30\%$  of gain in  $2\text{fb}^{-1}$ .
  - Checked with LED gain calibration
    - gains correspond to HV settings & stable
  - Leak checked – holding pressure
- East tubes will be replaced this summer
  - Otherwise substantial gain loss by September '03



# January Access Silicon status

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## Work Accomplished:

- **SuperFIB upgrade**
  - Still some work going on on firmware/sequences that has nothing to do with access time - 58 in all (38 done this access)
- **Commissioning of newly cooled ISL ladders WEST**
  - Done quickly on the WEST
- **L00 P.S. installation(replacement)**
  - Now 11/12 supply are L00 flavor (9/12)
- **Miscellaneous P.S. work**
  - Coping with radiation damage implied changing the scale of the Leakage current Ammeters
- **General single point failures analysis and recovery**
  - Recovered a SVXII Wedge (**SB2W10**)
- **Moving SVXII CPC cooling from SVXII chiller to ISL chiller**
  - Done on the WEST

## Work yet to be done:

- **General single point failures analysis and recovery**
  - Working hard on a tough costumer (**SB5W4**)
  - Other single ladder work mainly on the optical data transmission line.
- **Commissioning of newly cooled ISL ladders**
  - Will start Thursday on the EAST
- **Moving SVXII CPC cooling from SVXII chiller to ISL chiller**
  - Started wednesday on the EAST





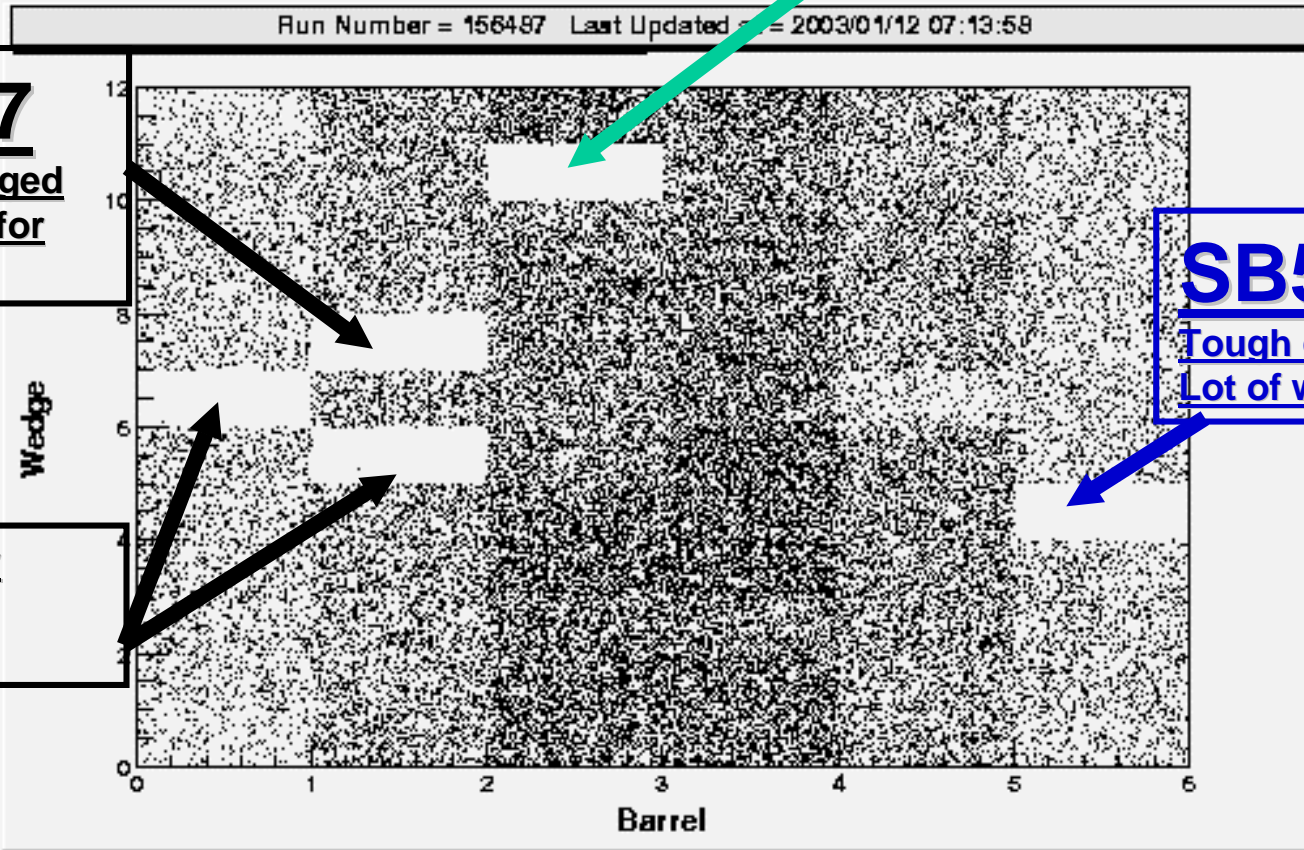
# SVXII coverage (SVT)

**SB2W10 Fixed**

**SB1W7**  
Being re-plugged  
Worth a shot for  
the offline

Single Ladder  
trouble being  
worked out

**SB5W4**  
Tough customer!  
Lot of work being done



This plot is the last run before the shut-down



# January Access Calorimetry Status

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- **WHA/pisa box**
  - Fix HV channels and PMTs
- **CEM pmt**
  - investigating gain problems in towers 2 & 3 of CEM 22E
- **Central led/xenon**
  - Fuse replaced in dead Xef wedge 3W
- **SMXR**
  - Mods in place for software reconfigure and resets.
- **Plug sourcing calibrations**
  - pem and pha will get finished this weekend
- **Plug misc.**
  - Replaced caen Power Supply
  - NW em timing project cabling
- **Protection diode replacement**
  - Calorimeter transition boards in ccal and pcal crates



# January Access Trigger and L3/EVB

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- **Trigger work done so far**
  - Readout List studies
  - New Fred Firmware
  - New preFred timing and firmware
  - Isolist studies
- **Trigger work yet to do**
  - L2 muon board
  - ROL studies
  - dynamic prescale testing
  - Test of Fred and Prefred changes
  - XFT bunch counter mismatches
    - Long xft test run this weekend.
- **L3 / Evb**
  - Integrated all 64 new processor nodes into the L3 farm
    - configured subfarms to balance the load on the converter nodes.
  - Finished cabling work
  - Updated HWDB and GUI's
  - Tested new farm
  - 268 PC's running L3 filters + converter and output pc's
    - subdivided into 16 subfarms w/16-18 processor nodes each.

(shutdown not required for this work)



# January Access Muon Status

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- **CMP**
  - top including blue beam and north wall done. 5/6 preamps on the bottom.
  - South wall still to be fixed (no access) The counter on the top was fixed.
- **CCU**
  - All removed and replacements being installed.
- **CMX**
  - fixed 9 CMX channels on Saturday in Wedges 15E & 16E
- **CMU**
  - Replaced power supply(7W)





# January Access the rest...

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- **Miniplug and Roman Pots**
  - Remaining 2 (of 12) miniplug transition boards to be done
  - 2 SMD boards w/squids for Roman Pot-2 to be installed. And 2 more to replace failing boards.
  - Cabling work for E. and W. miniplug.
- **PEI low voltage power supply modifications**
- **TOF PMT replacement.**
  - Fixed and tested ch350.
- **Daq work**
- **Database**
- **IFIX**
- **Psmon**
- **HVAC work on the 3<sup>rd</sup> floor**



# Summary

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- **Accomplished major tasks on schedule.**
  - A multitude of general maintenance jobs done as well
- **Now in the process of putting things back together, checking alignments, closing steel, and performing subsystem testing as we go.**
  - We've had to recover from 2 power outages in this period
- **We are getting kicked out January 30<sup>th</sup>.**
- **Accelerator is coming out of the shutdown on schedule.**
  - Tev cool down starts Monday Jan 27<sup>th</sup>, to have it cold by Wednesday